IN THE CLAIMS

The following listing of claims is provided in accordance with 37 C.F.R. §1.121:

1. (Original) A method of analyzing system performance with a system statistical associate (SSA), the method comprising:

collecting data on at least one system operating variable;

discerning at least one parameter affecting system performance from the data; and

generating a report on the at least one parameter affecting system performance.

2. (Currently Amended) The method of claim 1, further comprising:

monitoring a plurality of devices with a corresponding number of SSA modules comprised of:

collecting data on at least one device operating variable;

discerning at least one parameter affecting device performance from the data;

generating a data profile of parameters affecting device performance; and

communicating the data profile from each SSA module to the SSA~~; and deriving at least one system model based on the data profiles received from the plurality of SSA modules~~.

3. (Original) The method of claim 2, further comprising:

correlating a data profile from a first SSA module with a data profile of a second SSA module.

4. (Original) The method of claim 3, wherein the second SSA module is the nearest SSA module to the first SSA module.

5. (Original) The method of claim 4, wherein the nearest SSA module comprises the SSA module with one of:

the closest device operating variables;

the closest geographical proximity of devices;

the closest concurrent device operation;

the closest specie of device; and

the closest in time of device usage.

6. (Original) The method of claim 2, further comprising at least one of:

deriving a system lifetime model from the data profile;

finding correlation models among the plurality of devices;

data mining the data profile from each SSA module; and

performing pattern recognition techniques on the data profile from each SSA module.

7. (Original) The method of claim 1, wherein an operating variable comprises one of temperature, load, humidity, vibration, and power expended.

8. (Original) The method of claim 1, further comprising:

automatically changing the at least one discerned parameter to improve system performance.

9. (Original) A system statistical associate (SSA) module for use in a SSA monitoring system, the SSA module comprising:

a sensor configured to sense at least one operating variable on a monitored device;

a data processor configured to discern at least one parameter affecting the performance of the monitored device from the at least one sensed operating variable; and

a transmitter configured to transmit a data profile including the discerned parameter to a SSA system monitor.

10. (Original) The SSA module of claim 9, further comprising:

a receiver configured to receive a data profile from another SSA module,

wherein the data processor is further configured to correlate the received data profile with the sensed operating variable(s).

11. (Original) The SSA module of claim 10, wherein the received data profile is generated by another SSA module which comprises one of:

the closest in equipment operating variables;

the closest in geographical proximity of equipment;

the closest in concurrent equipment operation;

the closest in specie of equipment; and

the closest in time of equipment usage.

12. (Original) The SSA module of claim 9, wherein an operating variable comprises one of temperature, load, humidity, vibration, and power expended.

13. (Currently Amended) A system statistical associate (SSA), comprising:

a plurality of SSA modules, each SSA module comprised of:

a sensor configured to sense at least one operating variable of a piece of equipment; and

a module computer coupled to the sensor,

wherein the module computer is programmed to:

discern a parameter affecting equipment performance from the operating variable;

create a data profile of parameters determined to affect equipment performance; and

communicate the data profile to the SSA~~; and~~

~~a SSA computer programmed to derive at least one system model based on the data profiles received from the plurality of SSA modules~~.

14. (Original) The SSA of claim 13, wherein the SSA computer is further programmed to correlate a data profile from a first SSA module with a data profile of a second SSA module.

15. (Original) The SSA of claim 14, wherein the nearest SSA module comprises the SSA module with one of:

the closest in equipment operating variables;

the closest in geographical proximity of equipment;

the closest in concurrent operation of equipment;

the closest in specie of equipment; and

the closest in time of use of equipment.

16. (Original) The SSA of claim 13, wherein the SSA computer is further programmed to derive a system lifetime model from the data profiles received from the plurality of SSA modules.

17. (Original) The SSA of claim 13, wherein an operating variable comprises one of temperature, load, humidity, vibration, and power expended.

18. (Original) The SSA of claim 13, wherein the SSA computer is further programmed to automatically change the discerned parameter to improve system performance.

19. (Original) A system statistical associate (SSA), comprising:

means for generating data profiles of a plurality of monitored devices;

means for discerning at least one parameter affecting system performance from the data profiles; and

at least one of:

means for reporting the discerned parameter; and

means for automatically changing the discerned parameter to improve system performance.

20. (Original) The SSA of claim 19, further comprising:

means for correlating the data profiles of at least two different monitored devices.

21. (Original) The SSA of claim 19, further comprising:

means for collecting data on at least one system operating variable.